

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBIN CHEUNG,
ASHOK SINHA,
AVI TEPMAN and DAN CARL

Appeal 2008-0163
Application 10/686,486
Technology Center 1700

Decided: November 29, 2007

Before EDWARD C. KIMLIN, PETER F. KRATZ, and
LINDA M. GAUDETTE, *Administrative Patent Judges*.

KIMLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 15-20.

Claim 15 is illustrative:

15. An electro-chemical deposition system, comprising:

a mainframe having a mainframe wafer transfer robot disposed
therein;

a loading station disposed in connection with the mainframe, wherein the loading station comprises one or more loading station robots;

one or more processing stations disposed in connection with the mainframe, wherein each processing station comprises one or more electro-chemical deposition cells; and

one or more post deposition treatment chambers disposed in connection with the mainframe, wherein the one or more post deposition treatment chambers comprise one or more rapid thermal anneal chambers, one or more thermal anneal chambers, or a combination thereof.

The Examiner relies upon the following references as evidence of obviousness:

| | | |
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| Yoshioka | 5,297,910 | Mar. 29, 1994 |
| Bleck | 5,980,706 | Nov. 9, 1999 |
| Uzoh | 6,123,825 | Sep. 26, 2000 |
| Shinbara | 6,155,275 | Dec. 5, 2000 |

Appellants' claimed invention is directed to an electro-chemical deposition system comprising a mainframe, and in connection therewith, a loading station comprising one or more robots, one or more processing stations comprising one or more electro-chemical depositions cells, and one or more post deposition treatment chambers comprising one or more thermal anneal chambers.

Appealed claim 15 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Yoshioka in view of Bleck and Uzoh. Claim 20 stands

rejected under 35 U.S.C. § 103(a) as being unpatentable over the stated combination of references further in view of Shinbara.

We have thoroughly reviewed each of Appellants' arguments for patentability. However, we are in complete agreement with the Examiner that the claimed subject matter would have been obvious to one of ordinary skill in the art within the meaning of § 103 in view of the applied prior art. Accordingly, we will sustain the Examiner's rejections for the reasons set forth in the Answer, and we add the following primarily for emphasis.

Appellants do not dispute the Examiner's factual determination that Yoshioka, like Appellants, discloses a system for the treatment of semiconductor wafers comprising a mainframe having a transfer robot therein, which is in connection with a loading station including a transfer robot and multiple processing stations. Also, Appellants do not take issue with the Examiner's legal conclusion that it would have been obvious for one of ordinary skill in the art, based on the Bleck disclosure, "to have incorporated the electrochemical deposition chambers of Bleck et al into the mainframe wafer processing system of Yoshioka et al in order to allow more complete processing of the wafers within the single system" (Ans. 4, first para.). Rather, Appellants maintain that Bleck does not teach or suggest one or more thermal anneal chambers within a mainframe, and that while Ozoh teaches an annealing step, Ozoh "does not teach or suggest *combining* the structure that performs the annealing step with the structure that performs the previous steps" (Principal Br. 11, penultimate para.).

We fully concur with the Examiner that it would have been obvious for one of ordinary skill in the art to have incorporated all the stations necessary to the overall process in a singular mainframe of the type disclosed by Yoshioka in order to entirely automate the process. Yoshioka evidences that it was known in the art to embody a plurality of processes within one mainframe, and Appellants have apprised us of no reason why it would have been unobvious for one of ordinary skill in the art to include the claimed, well-known processes of electro-chemical deposition, annealing and rinsing into a single mainframe. It has generally been held that it is a matter of obviousness for one of ordinary skill in the art to convert batch processes into one, singular automated process. *See In re Giolito*, 530 F.2d 397, 398 (CCPA 1976); *In re Venner*, 262 F.2d 91, 95 (CCPA 1958).

We also note that the claim language "in connection with the mainframe" and "in connection with the loading station" fails to set forth any specific degree of proximity between the recited stations and the mainframe and loading station, respectively. Indeed, Appellants expressly "submit that the usage of claim term 'in connection with' is consistent in claims 15 and 20, and supported by the specification since 'in connection with' may be construed as 'directly or indirectly connected to'" (Reply Br. 7, last sentence). Consequently, it can be seen that when the claim language at issue is given its broadest reasonable interpretation, the claims encompass systems wherein the recited stations are not incorporated within the mainframe and loading station, but are located remotely therefrom via an indirect connection. Again, Appellants have presented no rationale why

such an indirectly connected system, having no restrictions on the proximity of its individual processing stations, would have been nonobvious to one of ordinary skill in the art.

As a final point, we note that Appellants base no argument upon objective evidence of nonobviousness, such as unexpected results, which would serve to rebut the prima facie case of obviousness established by the Examiner.

In conclusion, based on the foregoing and the reasons well stated by the Examiner, the Examiner's decision rejecting the appealed claims is affirmed .

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(vi)(effective Sept. 13, 2004).

AFFIRMED

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